

A new species of *Neoseiulella* (Acari: Phytoseiidae) from the Macaronesian Region, Canary Islands

MARÍA LOURDES MORAZA¹ & MIGUEL ÁNGEL PEÑA ESTÉVEZ²

¹Departamento de Zoología y Ecología, Facultad de Ciencias, Universidad de Navarra, C/ Irunlarrea 1, Pamplona 31080 (Navarra), España. E-mail: mlmoraza@unav.es

²Área del Medio Ambiente del Cabildo de Gran Canaria, C/ Prof. Agustín Millares Carló, s/n, 1º, 35003, Las Palmas de Gran Canaria, España. E-mail: estevez@canariastelecom.com

Abstract

A new species of mesostigmatid mite, *Neoseiulella ferraguti* sp. nov. collected from soil, litter and lichens of natural ecosystems on Tenerife island, Canary Islands is described. *Neoseiulella ferraguti* has two pairs of setae on the sternal shield, four pairs of preanal setae and two distinct pointed macrosetae on genu and basitarsus IV, macroseta on tibia IV slightly longer than other setae. A key for females of *Neoseiulella* species in the Canary Islands is provided.

Key words: Acari, Mesostigmata, *Neoseiulella ferraguti* n. sp., Canary Islands, Tenerife, Spain

Introduction

Surveys conducted from 1997 to 2002 in the Canary Islands, reported five new species of *Neoseiulella* Muma from natural ecosystems of the islands (Ferragut and Peña, 2003; Moraza et al., 2005). *Neoseiulella* is a well-represented genus, with 36 species described from Australia, Europe, New Zealand, North America and north of Africa on a high variety of host plants. The new species now described, bring new data about the taxonomy and ecology of these mites and a key provided for the species of *Neoseiulella* from Canary Islands may highlighted the mites systematic in the Macaronesian Region.

Material and methods

Mites were collected by Miguel Ángel Peña Estévez. The specimens were extracted using a Berlese-Tullgren funnel. Mites were cleared in Nesbitt's solution before mounting in

Hoyer's medium on microscope slides. Measurements in micrometers (μm) are presented as approximations. Shield lengths were measured along their midlines and widths at different setal levels. Setae were measured from the base of insertion to the tip. Idiosomal setal notation follows Lindquist and Evans (1965), with modifications for the caudal region as given by Lindquist (1994); leg chaetotaxy follows Evans (1963). Idiosomal notation of glands follows Athias-Henriot (1975) and Swirski and Amitai (1984) and generic nomenclature follows the criteria proposed by Chant and McMurtry (1994) for the Typhlodrominae.

***Neoseiulella ferraguti* Moraza & Peña-Estévez, sp. nov.**

Figures 1–7

Diagnosis. Dorsal shield 387 long, 258 wide at level of *S*2, with smooth surface. Heterogeneous dorsal setae: setae *z*2 = *J*5 and at least three times shorter than *s*6; *Z*5 at least five times longer than *J*5; *J*5 well developed. Sternal shield of female with two pairs of sternal setae; ventrianal shield of female with four pairs of preanal setae and a pair of well separated pores. Poculiform spermatheca. Macroseta on genu, tibia and basitarsus on leg IV. Ventrianal shield in male with seven pairs of preanal setae.

Female (Figures 1–4) (1 specimen measured).

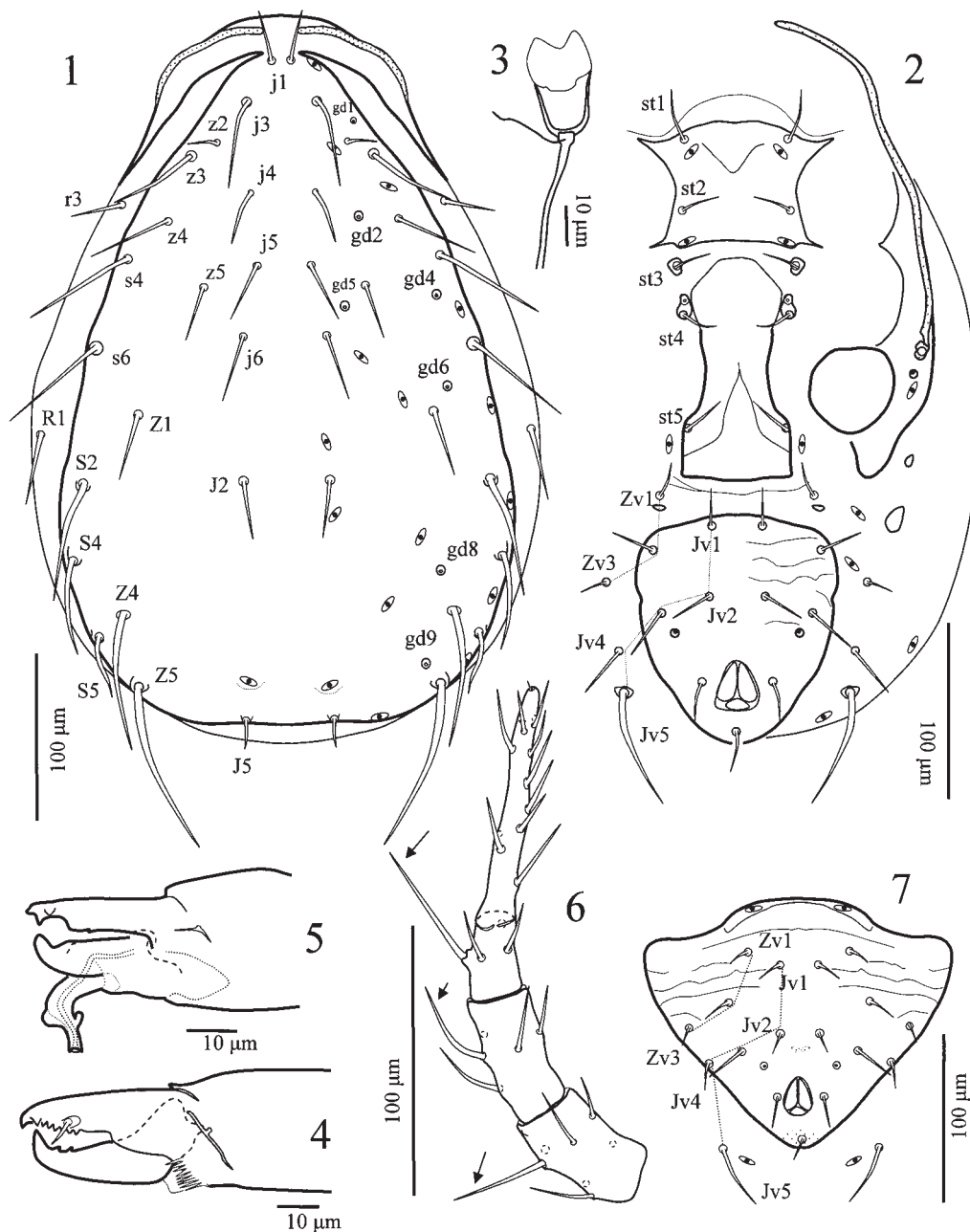
Idiosoma dorsum (Figure 1): Dorsal shield oval, 387 long, 258 wide at level of *S*2, with smooth surface. Nineteen pairs of smooth dorsal setae except for *Z*4 and *Z*5, which are slightly serrate. Marginal setae located on small tubercles. Length of setae *j*1 = 28, *j*3 = 47, *j*4 = *j*5 = 30, *j*6 = 37, *J*2 = 34, *J*5 = 17, *z*2 = 62, *z*3 = 52, *z*4 = 47, *z*5 = 30, *Z*1 = 34, *Z*4 = 77, *Z*5 = 96, *s*4 = *s*6 = 62, *S*2 = 71, *S*4 = 51, *S*5 = 32, *r*3 = 28, *R*1 = 40. Peritreme extending to level of *j*1.

Idiosoma venter (Figure 2): Sternal shield smooth, with two pairs of smooth setae, *st*1 (28 long) longer than *st*2 (22 long) and two pairs of lyrifissures; slightly concave posterior and convex anterior margins. Setae *st*3 (21 long) and *st*4 (22 long) and *gv*1 on metasternal shields. Genital shield (126 long, 65 wide at posterior margin) with posterior lateral margin tapering at level of *st*5 (26 long). Ventrianal shield (130 long and 120 wide at level of *Z*v2, 77 wide at level of anus), with four pairs of preanal setae and a pair of well-separated pores posterior to *J*v3. Four pairs of smooth opisthogastric setae around the ventrianal shield. *Z*v1 (20), *Z*v3 (13), *J*v4 (28) *J*v5 (70), and two pairs of well-developed metapodal shields. Calyx of spermatheca poculiform (Fig. 3), as long as wide (13).

Chelicerae (Figure 4): Movable digit of chelicerae (34 long) with two small teeth; fixed digit (38 long) with a row of seven minute teeth.

Legs: Measurements of legs (from base of leg to base of pretarsus) as follows: leg I: 400, leg II: 272, leg III: 296 and leg IV: 389. Three pointed macrosetae on leg IV: Sge IV 54, Sti IV 50, St IV 57; dorsal setae of tibia I as long as macrosetae on genu.

Male (Figures 5, 7) (1 specimen measured). Body shape similar to female.



FIGURES 1–7. *Neoseiulella ferraguti* Moraza & Peña-Estévez, **sp. nov.** 1. Female, idiosoma dorsal (holotype). 2. Female, idiosoma ventral (holotype). 3. Spermatheca. 4. Female, chelicera, antiaxial view. 5. Male, chelicera, antiaxial view. 6. Male, lateral aspect of right leg IV (genu, tibia and tarsus). 7. Male, ventrianal shield.

Idiosoma dorsum: Dorsal shield 308 long, 200 wide at level of *S*2, with setae *r*3 and *R*1 on the shield. Dorsal chaetotaxy, adenotaxy and poroidotaxy similar to female. Peritreme extending to level of *j*1.

Idiosoma venter: Sternogenital shield smooth. Ventrianal shield free and faintly striate, with a pair of punctiform preanal pores posterior to *J*v3 (Fig. 7) and seven pairs of thin and smooth preanal setae. Ratio length/width: 0.8 (150 long, 183 wide). Seta *J*v5 on soft opisthogastric cuticle.

Chelicera (Figure 5): Movable digit with one tooth, fixed digit with two small distal teeth and a basal minute tooth. Spermatodactyl L-shape with a conspicuous heel.

Legs: Similar to those of female. Measurements of legs (from base of leg to base of pretarsus) as follows: leg I: 391, leg II: 267, leg III: 267 and leg IV: 369. Three pointed macroseta on legs IV: *S*ge IV 35, *Sti* IV 32, *St* IV 46 (Fig. 6).

Etymology. This new species is named after Francisco Ferragut, an eminent acarologist.

Type material: Holotype female from lichens on dead log, UTM: 28RCS 868 606, altitude 550 meters, Chamorga (Tenerife), 25 January 1997; one paratype male from soil and litter of *Cheirolophus canariensis* var. *subexpinnatus* (Burchard), altitude 275 meters, coordinates UTM: 28RCS 145 386, Tamargo (Tenerife), 8 December 1995. Holotype and paratype deposited in the Museum of Zoology of University of Navarra (MZUNAV).

Discussion. *N. ferraguti* sp. nov. belongs to the *tiliarum* species group as defined by Chant and McMurtry (1994). The new species differs from the other species of the group especially by the presence of three pointed macrosetae on legs IV (only two distinct), smooth dorsal shield and the relative length of dorsal setae. *Neoseiulella cassinia* (Collyer, 1982) has three not capitate macrosetae in leg IV, dorsal shield ornate, dorsal opisthonotal setae short (their tips do not reach the bases of the following setae) and lacks ventrianal pores.

Differences among species of *Neoseiulella* from Canary Islands are highlighted in the following key to females

- 1 Leg IV with one macrosetae..... 2
- Leg IV with three macrosetae 4
- 2 Seta *z*2 as long as *J*5 and 1/2 as long as *j*3; *S*4 and *S*5 no more than 1/3 as long as *Z*5; seta *Z*5 almost five times as long as *J*5; ventrianal pores absent; body size: 350 long, 192 wide..... *N. splendida* Ferragut & Peña-Estévez
- Seta *z*2 longer than *J*5 and as long as, or more than 1/2 as long as, *j*3 3
- 3 Seta *Z*5 three times as long as *J*5; seta *s*6 1.5 as long as *z*2; dorsal shield elliptical; all dorsal setae short, with tips not reaching the bases of the following setae; peritreme extending to *z*2; body size: 376 long, 166 wide.. *N. elongata* Ferragut & Peña-Estévez
- Seta *Z*5 seven times as long as *J*5; seta *s*6 twice as long as *z*2; dorsal shield oval; mar-

- ginal dorsal setae long, with tips extending beyond the base of the following setae; peritreme long, reaching $j1$; body size: 402 long, 254 wide *N. arinoi* Moraza, Peña-Estévez & Ferragut
- 4 Seta $Z5$ twice as long as $J5$; seta $z2$ half as long as $j3$; $S4$ and $S5$ not more than half as long as $Z5$; body size: 381 long, 183 wide..... *N. canariensis* Ferragut & Peña-Estévez
- Seta $Z5$ at least five times as long as $J5$; seta $z2$ $1/3$ as long as $j3$ 5
- 5 Seta $Z5$ more than five times as long as $J5$; seta $s6$ 3.5 times as long as $z2$; seta $J2$ as long as $j6$; body size: 387 long, 258 wide..... *N. ferraguti* n. sp.
- Seta $Z5$ more than 10 times as long as $J5$; seta $s6$ six times as long as $z2$; seta $J2$ $1/2$ as long as $j6$; body size: 419 long, 254 wide *N. longisetae* Moraza, Peña-Estévez & Ferragut

Acknowledgments

Special thanks to the Cabildo of Tenerife and to the organization of The Teide National Park for allowing M.A. Peña Estevez to collect the specimens.

References

- Athias-Henriot, C. (1975) Nouvelles notes sur les Amblyseini. II. Le relevé organotaxique de la face dorsal adulte (Gamasides, Protoadéniques, Phytoseiidae). *Acarologia*, 27, 20–29.
- Chant, D.A. & McMurtry, J.A. (1994) A review of the subfamilies Phytoseiinae and Typhlodrominae (Acari: Phytoseiidae). *International Journal of Acarology*, 20, 223–310.
- Evans, G.O. (1963) Observations on the chaetotaxy of the legs in the free-living Gamasina (Acari: Mesostigmata). *Bulletin British Museum (Natural History) Zoology*, 10 (5), 275–303.
- Ferragut, F. & Peña-Estévez, M.A. (2003) Phytoseiid mites of the Canary Islands (Acari: Phytoseiidae): 1. Gran Canaria Island. *International Journal of Acarology*, 29(2), 149–167.
- Lindquist E.E. (1994) Some observations on the chaetotaxy of the caudal body region of Gamasine mites (Acari: Mesostigmata), with a modified notation for some ventrocaudal body setae. *Acarologia*, 35 (4), 323–326.
- Lindquist E.E. & Evans, G.O. (1965) Taxonomic Concepts in the Ascidae, with a Modified Setal Nomenclature for the Idiosoma of the Gamasina (Acarina: Mesostigmata). *Memories of the Entomological Society of Canada*, 47, 1–64.
- Moraza, M.L., Peña M.A. & Ferragut, F.J. (2005) Two new species of *Neoseiulella* Muma of the Canary Islands (Acari: Phytoseiidae). *International Journal of Acarology*, 31(2), 107–112.
- Swirski, E. & Amitai, S (1984) Notes on phytoseiid mites (Mesostigmata: Phytoseiidae) from the Mediterranean littoral zone of Israel, with a description of a new species of *Typhloctonus*. *Israel Journal of Entomology*, 18, 71–82.